DOCUMENT RESUME

ED 399 435 CE 072 557

AUTHOR Burkhart, Jennifer
TITLE Evaluating Workplace Education Program Effectiveness.
INSTITUTION Colorado State Dept. of Education, Denver. State Library and Adult Education Office.
PUB DATE 96
NOTE 15p.; For related documents, see CE 072 551-559.
PUB TYPE Guides - Non-Classroom Use (055) -- Reports - Evaluative/Feasibility (142)

EDRS PRICE MF01/PC01 Plus Postage.
DESCRIPTORS Adult Education; Comparative Analysis; *Evaluation Methods; Formative Evaluation; *Industrial Training; Program Effectiveness; Program Evaluation; Summative Evaluation; *Workplace Literacy
IDENTIFIERS 353 Project

ABSTRACT

This guide, which is intended for project directors, coordinators, and other professional staff involved in developing and delivering workplace education programs, explains the workplace education evaluation process, the main approaches to evaluation, and considerations in selecting appropriate evaluation instruments. Discussed first are the importance of program evaluation and measurable outcomes. Special attention is paid to the importance of evaluating "soft skills" training and elements business wants from evaluation (those which involve key players, use multiple evaluation measures, incorporate continuous feedback, use evaluation findings to review/revise training as needed, assess program outcomes through measurable outcomes). The similarities and differences between formative and summative evaluation are detailed, and several noninstructional factors that may influence training outcomes are mentioned. Described next are the four levels of Donald L. Kirkpatrick's model for evaluating training, which entails measurement of the following: training participants' reactions to training at the time of training; their learning of the training materials' content; their use of new skills on the job; and observable business results (the return on investment as a result of training). The strengths/weaknesses of using student reaction, student learning, student performance, and organization results as measures of program effectiveness are weighted. Contains 10 informational resources. (MN)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

ED 399 435

CE

Evaluating Workplace Education Program Effectiveness

cde

COLORADO DEPARTMENT OF EDUCATION

COLORADO STATE LIBRARY AND ADULT EDUCATION OFFICE

CE072557

U.S. DEPARTMENT OF EDUCATION
Office of Educational Research and Improvement
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)

This document has been reproduced as received from the person or organization originating it.

Minor changes have been made to improve reproduction quality.

• Points of view or opinions stated in this document do not necessarily represent official OERI position or policy.

PERMISSION TO REPRODUCE AND DISSEMINATE THIS MATERIAL HAS BEEN GRANTED BY

J M Schubert

TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)

BEST COPY AVAILABLE

Evaluating Workplace Education Program Effectiveness

1996

Jennifer Burkhart
Consultant with the Office of Adult Education

Funded by
The Adult Education Act 100-297 Section 353
Administered through
The Colorado Department of Education
State Library and Adult Education Office

Office of Adult Education
Colorado Department of Education
201 East Colfax Ave.
Denver, CO 80203-1799

Colorado State Board of Education
seated January 1995
Patricia M. Hayes, Chair, Aurora-6th Congressional District
Thomas M Howerton, Vice Chair, Colorado Springs-5th Congressional District
John Evans, Parker-Member-at-Large
Royce D. Forsyth, Denver-1st Congressional District
Patti Johnson, Broomfield-2nd Congressional District
Clair Orr, Kersey-4th Congressional District
Hazel F. Petrocco, Pueblo-3rd Congressional District

Commissioner of Education
Dr. William T. Randall, State of Colorado
Nancy Bolt, Assistant Commissioner, State Library and Adult Education

Table of Contents

Introduction	1
Training Evaluation in Business and Industry	1
Evaluation: What Business Wants	2
Forms of Evaluation	3
Evaluation: Outcomes Measurement	4
General Guidelines to Evaluation	8
Bibliography	9
Resources	9
Notes	10

Colorado Department of Education Mission Statement
"To lead, to serve, and to promote quality education for all."

CDE does not discriminate on the basis of disability, race, color, religion, sex, national origin in access to, employment in or provision of any of CDE's programs, benefits, or activities. The following person has been designated to handle inquiries regarding this policy: Director of Educational Equity Programs and Services, Colorado Department of Education, 201 East Colfax Avenue, Denver, CO 80203-1799, 303/866-6676

Evaluating Workplace Education Program Effectiveness

One of the key components of any training or educational program is the program evaluation process. This process measures program effectiveness and success in terms of program components and standards developed and identified by training or educational providers. Its purpose is to provide information about program impact and return on investment to funding sources, directors, coordinators, staff, and participants. In Colorado, all programs funded with Adult Education Act dollars have evaluative processes in place to measure curriculum and instruction; educational gains; recruitment; retention; staff development; and support services. These program components are measured against indicators and minimum program standards developed by educators in the field to ensure quality educational services. This system of evaluation is similar to the evaluation process used in a workplace education program because it is based on program standards that demonstrate overall program effectiveness using measurable outcomes

Measurable outcomes are the cornerstone of workplace education program evaluation because they present vital information to business partners and provide for continuous program improvement. This process begins with the developmental stage of the workplace education program and continues throughout all program components. For example, the desired outcomes of the workplace education program will be identified in the initial program planning stages with input from the workplace education advisory council. Next, evaluative instruments will be developed and used throughout the program to provide feedback that allows for review and revision of program components. Finally, this process helps to ensure that the desired outcomes of the workplace education program are satisfied and directs the program developers in planning for program success.

This guide will provide project directors, coordinators and professional staff an understanding of the workplace education program evaluation process; the differences and similarities between formative and summative evaluations; and appropriate evaluative instruments. Several supplemental resources are listed in the back of this guide for additional information on workplace education program evaluation.

Training Evaluation in Business and Industry

Just as adult educators strive to evaluate their educational programs, trainers in business and industry continue to develop new methods of evaluating company training. Companies evaluate training for many of the same reasons adult educators perform program evaluations; they must provide supporting data to their funding source (the company), company managers, staff, and the training participants. Training evaluation is one of the key considerations for companies looking at training budgets, especially for those companies having to make budget cuts throughout the organization. After all, the costs of providing training are easier to see than the costs of not providing training. This is especially true when we talk about "soft skills" training.

Soft skills training involves those skills that are demonstrated through changed behaviors which result in changed performance on the job. They are those skills which are hard to detect or measure unless evaluators are aware of the varying behaviors to look for in observations. For example, teamwork skills are considered soft skills because although they may result in improved productivity, the actual skills are difficult to detect unless specific behaviors are identified and observations made. Because soft skills are less readily noticed in the workplace, training in these skills is often seen as unnecessary, and the costs involved may be considered excessive. This perception is important to workplace education providers because the basic skills taught in their programs are often considered to be soft skills.

Because workplace education partnerships involve various partners, the evaluation process should be designed to meet the needs of all partners. This means that in addition to evaluating curriculum and instruction; educational gains; recruitment; retention; staff development; and support services, the workplace education partners will measure the training impact for the company. Before looking at the various methods of evaluation, it is important to know what businesses look for in outside training providers in terms of evaluation.

Evaluation: What Business Wants

As mentioned in the previous section, evaluation is an important consideration for in-house company trainers and outside educational providers who contract services with business. The data gathered through the program evaluation validates the need for training and verifies the impact of the training program in terms of measurable outcomes. There are many ways to evaluate training effectiveness. Most workplace education business partners will look to the educational provider to lead the design of the evaluation process; however, there will be basic considerations that most business partners will require of the educational partner in evaluating program effectiveness. These considerations include:

- Evaluation involves key players (managers, supervisors, and employees).
- Evaluation consists of multiple evaluation measures of quality or impact.
- Evaluation incorporates continuous feedback..
- Evaluation is used to review and revise training as needed.
- Evaluation assesses program impact using measurable outcomes.

Workplace education providers will want to address each of these considerations during the initial conversations with business partners and incorporate them in the development of evaluation processes.

Forms of Evaluation

Because evaluation occurs throughout the workplace education program, it is helpful for workplace education providers to understand what processes are appropriate to use at different stages of program development. The following will assist education providers in grouping evaluation processes to facilitate the development of the evaluation process. There are two general categories in which to group evaluation processes: formative evaluation and summative evaluation.

Formative Evaluation

As implicated by its name, formative evaluation involves those evaluation processes that are generally used during the beginning and middle stages of program operation. These processes assist in identifying problem areas that can be addressed and modified while change is possible and productive for the workplace education program. Frequently these evaluations are used to determine if all partners have shared goals and a common understanding of the program components, processes, definitions, and directions. Additionally, these evaluations are used to determine whether the learning processes and methods utilized are sufficient in accomplishing the goals of all involved in the workplace education program. There are many evaluation tools or instruments that are used when conducting formative evaluation. These include:

- Supervisor Interviews
- Employee Interviews
- Supervisor Observations
- Employee Self-observations
- Document Analysis
  - needs assessments
  - curriculum
  - written evaluations
- Classroom evaluations
- Individual Education Plans
- Anecdotal Information

Each of these instruments or evaluation methods provides workplace education providers with valuable information that will assist in continuous program improvement while providing intermittent feedback to the workplace education partners. Formative evaluation also addresses at least four of the five key considerations described in the previous section: 1) they involve the key players; 2) there are multiple evaluation measures used; 3) they provide continuous feedback; and 4) they are used to review and revise the training as needed.

Summative Evaluation

In contrast to formative evaluation, summative evaluation usually takes place at the end of the program operation. It is designed to assess how well the workplace education program has succeeded through the use of pre and post program data. These evaluation measures usually assess the basic skills abilities of the students; the transfer of these skills to the job; the adult learner's beliefs about basic skills and education; and the transfer of training to the workplace in

terms of measurable outcomes identified in the initial stages of the workplace education program. The measurement instruments used in summative evaluation include the following:

- Standardized Tests/Assessments
- Customized Tests/Assessments
- Supervisor Questionnaires (related to basic skills practices)
- Employee Questionnaires (related to basic skills practices)
- Pre and Post Supervisor Interviews
- Pre and Post Employee Interviews
- Subsequent Performance Ratings (identified as measurable outcomes)

Obviously some of the formative and summative evaluation instruments can be used for a variety of purposes and are not exclusive to either category; however, these lists should provide education providers with a collection of instruments to pull from while designing and implementing the evaluation process. The next section of this guide will further delineate an evaluation process that assesses workplace-specific measurable outcomes.

Evaluation: Outcomes Measurement

Adult educators know that there are many factors that can influence learning. For example, individual students have various educational background experiences that influence learning; the learning environment impacts the adult learners experience; and program components must reflect good adult education practices to provide sound learning opportunities for adult learners. In business, trainers are also aware of the many factors that affect training outcomes. For example, management and supervisors must support training efforts for skills to transfer to the workplace; the company must provide for quality training to impact employees' learning experiences; and the company culture must encourage learning with words and actions. Just as there are many considerations that impact educational experiences, there are also many interrelated factors that come into play when trying to measure the impact of training in the workplace.

It is difficult to ascertain the cause of improved quality, productivity, customers service, and other outcomes often used to measure the result of training programs because of the other influences that could impact these measures. For instance, the productivity of Department F increased after implementing a workplace education program targeted to that department. However; during the workplace education program, Department F implemented a new production process, and transferred in another supervisor. Can the workplace education partners state that it was the workplace education program that impacted productivity? These questions frequently arise when trying to demonstrate the workplace-specific measurable outcomes or return on investment (ROI) resulting from soft-skills training. Nevertheless, with proper resources, strong evidence can be collected to establish the returns of workplace education programs.

Level Four Evaluation

Donald L. Kirkpatrick (1959) outlined a four level model for evaluating training that is commonly used in business. Each level of this model describes a measurement of training, each more complex than the preceding level. This model, as outline below, can be used to measure the impact of both technical skills and soft skills training; however, until recently, trainers generally stopped measuring soft skills training impact at Level Three because data required for Level Four evaluation was difficult to collect. This section will describe a process based upon Kirkpatrick's model that allows for Level Four evaluation in workplace education programs.

In general terms, the four levels of evaluation outlined by Kirkpatrick include:

- Level One: the measurement of the training participants' reactions to training at the time of training
- Level Two: the measurement of learning the content of the training material
- Level Three: the measurement of the use of new skills taught in training on the job
- Level Four: the measurement of the observable business results or the return on investment as a result of training

Most adult educators will recognize a semblance of these levels of evaluation to those measures used in adult education programs. For example, Level One evaluation in an adult education program may involve daily feedback collected from students in the form of interviews or anecdotal information; Level Two evaluation may involve comprehension checks used in conjunction with the adult education curriculum or assessment measures; and Level Three evaluation may include standardized skills assessments or customized assessments using realia. Level Four evaluation, however, is seldom used in adult education programs because it requires observations of the skills learned in the student's daily life with a measurable outcome that shows training impact on the student's daily life. This level of evaluation requires observation of the student after the training has occurred and is seldom possible for adult education programs to perform because students generally leave the program after the training is concluded. In contrast, workplace education providers have the opportunity to observe training impact on workers because the workers will remain in the company and measurable outcomes can be established for this evaluation process.

Levels One and Two of Kirkpatrick's model involve those formative evaluation measures listed previously in this guide. They are those that allow for program change and development. Levels Three and Four, on the other hand, generally fall into the summative evaluation measures because they are those that measure the post-training impact. However, of these summative evaluation measures, Level Four requires the most in terms of time and resources and remits the most data in terms of training impact to the business.

The following will provide the steps involved in conducting Level Four evaluation in a workplace education program. This planning process will assist workplace education providers during every step of the program planning stage.

Step One begins during the initial stages of program development with the workplace education advisory council identifying the critical job tasks to address in training. These critical job tasks reflect the outcomes that the company is looking for. For example, if the advisory council identifies the utilization of quality measurement documents as a critical job task, the workplace education provider will analyze this job task to teach the basic skills necessary in successfully using quality measurement documents.

Step Two involves the Job Task Analysis. Once the critical job tasks have been identified, the workplace education provider will observe competent workers performing these tasks to analyze what skills are necessary in successfully performing each task on the job. This provides the basis for behavioral observation. The workplace education provider will want to note what behaviors are exhibited, and what skills are observed in an employee who performs the task correctly. These observations will be the measurable outcomes of Level Four evaluation.

Step Three consists of a detailed analysis of the data gathered during the job task analysis to identify what will be taught in the workplace education program. This provides the structure for the development of the customized curriculum.

Step Four requires the education provider to identify and/or develop skills assessments that measure the skills identified in the job task analysis and targeted in the customized curriculum. This step also requires all workplace education partners to identify how these skills will be measured on the job. For example, the partners may decide to compare the performance of employees who went through training with those who have not. This type of comparison can be valid if the two groups of employees demonstrated similar skills and performed similar tasks prior to instruction. This step is very important because it provides the measurable outcomes that will be used in evaluating program effectiveness.

Step Five entails the development of the customized curriculum and lesson plans that will meet the needs of the students and facilitate the instructor in teaching those skills that were targeted to be included in instruction.

Level Four evaluation follows the program planning steps outlined in each of the guides included in this Workplace Education Program Development Notebook. Although completed during the last stages of the workplace education program, this evaluation process incorporates all the planning stages and validates the success of the overall program in terms of the measurable outcomes outlined by the business partner.

Evaluating Workplace Education Program Effectiveness

All levels of evaluation outlined in Kirkpatrick's model should be used in evaluating program effectiveness. Both summative and formative evaluation have their place in providing quality instruction to employees and solid data to employers who search for reasons to support their decisions to provide for this training in their budgets. Evaluation provides the road map to program success.

Kirkpatrick's four level model is applied to workplace education program evaluation and illustrated in this chart taken from *The Bottom Line: Basic Skills in the Workplace* (1988):

Type/ Level	Purpose	Strengths	Weaknesses	Examples
Student Reaction	Measure student feelings about a program/course	• Easy to administer • Provides immediate feedback on instructors, facilities, and program design	• Subjective • Provides no measurement of learning, transfer of skills or benefit to the program	• "Happiness" reports • Informal student/ instructor interview • Group Discussion
Student Learning	Measuring the amount of learning that has occurred in a program/course	• Provides objective data on the effectiveness of training • Data can be collected before students leave the training program	• Requires skill in test construction • Provides no measurement of transfer of skills or benefit to the organization	• Written pre/post tests • Skills laboratories • Role Plays • Simulations • Projects or presentations • Oral examinations
Student Performance	Measure the transfer of training	• Provides objective data on impact to job situation	• Requires task analysis skills to construct and is time consuming to administer • Can be a "politically" sensitive issue	• Performance checklists • Performance appraisals • Critical checklists analysis • Self-appraisal • Observation
Organization Results	Measure impact of training on organization	• Provides objective data for cost/benefit analysis and organizational support	• Requires high level of evaluation design skills; requires collection of data over a period of time • Requires knowledge of organization needs and goals	• Employee suggestions • Manufacturing indexes (cost, scrap, schedule compliance, quality, equipment donation) • Union grievances • Absenteeism rates • Accident rates • Customer complaints

BEST COPY AVAILABLE

General Guidelines to Evaluation

There are basic guidelines to keep in mind while developing the workplace education evaluation process:

- Keep it simple
- Use economical evaluation methods
- Tie the evaluation to company needs
- Use both formative and summative evaluation methods
- Adjust the workplace education program based on the results
- Remain flexible
- Be creative
- Remember the bottom line
- Publish and report the results in accordance to the confidentiality agreement

---

This guide has focused on workplace education program evaluation; the difference and similarities between formative and summative evaluation; and identifying appropriate evaluative instruments for workplace education programs. For more information on workplace education program evaluation, please refer to the resources listed in the back of this guide. As always, the Office of Adult Education will provide technical assistance or training to facilitate your workplace education efforts.

For assistance contact: **Douglas Glynn**
Workplace Education Consultant
(303) 866-6936

Bibliography

The Bottom Line: Basic Skills in the Workplace. Washington, DC: US Department of Education, US Department of Labor, 1988

Kirkpatrick, Donald L. Evaluating Training Programs: The Four Levels. San Francisco, CA: Berrett-Koehler Publishers, Inc., 1994.

Workplace Literacy Interview Guide: Judging the Quality and Effectiveness of Literacy Providers. Washington, DC: National Alliance of Business, 1995.

Workplace Literacy Product Checklist: Judging the Quality of Workplace Literacy Products. Washington, DC: National Alliance of Business, 1995.

Informational Resources

Barker, Kathryn Chang. A Program Evaluation Handbook for Workplace Literacy. Ottawa, Ont: National Literacy Secretariat, 1991.

The Bottom Line: Basic Skills in the Workplace. Washington, DC: US Department of Education, US Department of Labor, 1988.

Kalman, Judy and Kay Losey Fraser. Opportunities Lost and Lessons Learned Inside a Workplace Literacy Program. Berkeley, CA: National Center for Research in Vocational Education, 1992.

Kirkpatrick, Donald L. Evaluating Training Programs: The Four Levels. San Francisco, CA: Berrett-Koehler Publishers, Inc., 1994.

Workplace Literacy Interview Guide: Judging the Quality and Effectiveness of Literacy Providers. Washington, DC: National Alliance of Business, 1995.

Workplace Literacy Product Checklist: Judging the Quality of Workplace Literacy Products. Washington, DC: National Alliance of Business, 1995.

Notes:

BEST COPY AVAILABLE